

This listing of claims will replace all prior versions, and listings, of claims in the application:

**LISTING OF CLAIMS:**

1.     **(original)** A modified low molecular weight heparin (MLMWH) compound having a molecular weight of about 5,000 Daltons to about 9,000 Daltons.
2.     **(original)** The MLMWH compound in accordance with claim 1, wherein said MLMWH compound (1) inhibits fibrin-bound thrombin and fluid-phase thrombin by catalyzing antithrombin, and (2) inhibits thrombin generation by catalyzing factor Xa inactivation by antithrombin.
3.     **(original)** The MLMWH compound in accordance with claim 1, wherein said MLMWH compound has an anti-factor IIa activity of about 40 U/mg to about 100 U/mg, and an anti-factor Xa activity of about 90 U/mg to about 150 U/mg.
4.     **(original)** The MLMWH compound in accordance with claim 3, wherein said MLMWH compound has an anti-factor IIa activity of about 60 U/mg to about 75 U/mg, and an anti-factor Xa activity of about 100 U/mg to about 125 U/mg.
5.     **(original)** The MLMWH compound in accordance with claim 4, wherein said MLMWH compound has an anti-factor IIa activity of about 65 U/mg, and an antifactor Xa activity of about 115 U/mg.

6. (original) The MLMWH compound in accordance with claim 1, wherein said MLMWH compound has a molecular weight of about 5,400 Daltons to about 8,000 Daltons.

7. (original) The MLMWH compound in accordance with claim 1, wherein said MLMWH compound has a molecular weight of about 5,800 Daltons to about 7,000 Daltons.

8. (original) The MLMWH compound in accordance with claim 1, wherein said MLMWH compound has a molecular weight of about 6,000 Daltons.

9. (original) A method for treating a thrombotic condition in a mammal, said method comprising administering to said mammal a pharmacologically acceptable dose of a modified low molecular weight heparin (MLMWH) compound having a molecular weight of about 5,000 Daltons to about 9,000 Daltons.

10. (original) The method in accordance with claim 9, wherein said MLMWH compound (1) inhibits fibrin-bound thrombin and fluid-phase thrombin by catalyzing antithrombin, and (2) thrombin generation by catalyzing factor Xa inactivation by antithrombin.

11. **(original)** The method in accordance with claim 9, wherein said MLMWH compound has an anti-factor IIa activity of about 40 U/mg to about 100 U/mg, and an anti-factor Xa activity of about 90 U/mg to about 150 U/mg.

12. **(original)** The method in accordance with claim 11, wherein said MLMWH compound has an anti-factor Ha activity of about 60 U/mg to about 75 U/mg, and an anti-factor Xa activity of about 100 U/mg to about 125 U/mg.

13. **(original)** The method in accordance with claim 12, wherein said MLMWH compound has an anti-factor IIa activity of about 65 U/mg, and an anti-factor Xa activity of about 115 U/mg.

14. **(original)** The method in accordance with claim 9, wherein said MLMWH compound has a molecular weight of about 5,400 Daltons to about 8,000 Daltons.

15. **(original)** The method in accordance with claim 9, wherein said MLMWH, wherein said MLMWH compound has a molecular weight of about 5,800 Daltons to about 7,000 Daltons.

16. **(original)** The method in accordance with claim 9, wherein said MLMWH compound has a molecular weight of about 6,000 Daltons.

17. **(original)** The method in accordance with claim 9, wherein said thrombotic condition is arterial thrombosis.

18. **(original)** The method in accordance with claim 9, wherein said thrombotic condition is coronary artery thrombosis.

19. **(original)** The method in accordance with claim 9, wherein said thrombotic condition is venous thrombosis.

20. **(original)** The method in accordance with claim 9, wherein said thrombotic condition is pulmonary embolism.

21. **(original)** The method in accordance with claim 9, wherein said MLMWH compound is administered by injection.

22. **(original)** A method of preventing the formation of a thrombus in a mammal at risk of developing thrombosis, said method comprising administering to said mammal a pharmacologically acceptable dose of a modified low molecular weight heparin (MLMWH) compound having a molecular weight of about 5,000 Daltons to about 9,000 Daltons.

23. **(original)** The method in accordance with claim 22, wherein said MLMWH compound (1) inhibits fibrin-bound thrombin and fluid-phase thrombin by catalyzing antithrombin, and (2) thrombin generation by catalyzing factor Xa inactivation by antithrombin.

24. **(original)** The method in accordance with claim 22, wherein said MLMWH compound has an anti-factor Ha activity of about 40 U/mg to about 100 U/mg, and an anti-factor Xa activity of about 90 U/mg to about 150 U/mg.

25. **(original)** The method in accordance with claim 24, wherein said MLMWH compound has an anti-factor Ha activity of about 60 U/mg to about 75 U/mg, and an anti-factor Xa activity of about 100 U/mg to about 125 U/mg.

26. **(original)** The method in accordance with claim 25, wherein said MLMWH compound has an anti-factor h a activity of about 65 U/mg, and an anti-factor Xa activity of about 115 U/mg.

27. **(original)** The method in accordance with claim 22, wherein said MLMWH compound has a molecular weight of about 5,400 Daltons to about 8,000 Daltons.

28. **(original)** The method in accordance with claim 22, wherein said MLMWH, wherein said MLMWH compound has a molecular weight of about 5,800 Daltons to about 7,000 Daltons.

29. **(original)** The method in accordance with claim 22, wherein said MLMWH compound has a molecular weight of about 6,000 Daltons.

30. **(original)** The method in accordance with claim 22, wherein said mammal is at increased risk of developing a thrombus due to a medical condition which disrupts hemostasis.

31. **(original)** The method in accordance with claim 30, wherein said medical condition is coronary artery disease.

32. **(original)** The method in accordance with claim 30, wherein said medical condition is atherosclerosis.

33. **(original)** The method in accordance with claim 22, wherein said mammal is at increased risk of developing a thrombus due to a medical procedure.

34. **(original)** The method in accordance with claim 33, wherein said medical procedure is cardiac surgery.

35. **(original)** The method in accordance with claim 34, wherein said medical procedure is cardiopulmonary bypass.

36. **(original)** The method in accordance with claim 33, wherein said medical procedure is catheterization.

37. **(original)** The method in accordance with claim 36, wherein said catheterization is cardiac catheterization.

38. **(original)** The method in accordance with claim 33, wherein said medical procedure is atherectomy.

39. **(original)** A method for inhibiting thrombus formation in a patient, said method comprising the step of administering to the patient a pharmacologically acceptable dose of a modified low molecular weight heparin (MLMWH) compound having a molecular weight of about 5,000 Daltons to about 9,000 Daltons.

40. **(original)** The method in accordance with claim 39, wherein said MLMWH compound (1) inhibits fibrin-bound thrombin and fluid-phase thrombin by catalyzing antithrombin, and (2) thrombin generation by catalyzing factor Xa inactivation by antithrombin.

41. **(original)** A method for inhibiting fibrin-bound thrombin and thrombin generation in a mammal, said method comprising administering to said mammal a pharmacologically acceptable dose of a modified low molecular weight heparin (MLMWH) compound having a molecular weight of about 5,000 Daltons to about 9,000 Daltons.

42. **(original)** A pharmaceutical composition comprising the MLMWH compound of claim 1 and a pharmaceutically acceptable carrier.

43. **(newly added)** A purified preparation comprising modified heparin chains that (a) bridge antithrombin to thrombin, (b) do not bridge thrombin to fibrin, and (c) inhibit Factor Xa.

44. **(newly added)** A purified preparation as claimed in claim 43 which is characterized by its ability to  
(a) inhibit fibrin-bound thrombin and fluid-phase thrombin, (b) and catalyze factor Xa inactivation by antithrombin.

45. **(newly added)** A purified preparation as claimed in claim 43 wherein the heparin chains have a mean molecular weight of 6000 Daltons.

46. **(newly added)** A method for treating a thrombotic condition in a mammal comprising administering a pharmacologically acceptable dose of a purified preparation of claim 43.

47. **(newly added)** A method of preventing the formation of a thrombus in a mammal at risk of developing thrombosis comprising administering to the mammal a pharmacologically acceptable dose of a purified preparation of claim 43.

48. **(newly added)** A method for inhibiting fibrin-bound thrombin and thrombin generation in a mammal comprising administering to the mammal a pharmacologically acceptable dose of a purified preparation of claim 43.

49. **(newly added)** A process for preparing a purified preparation of claim 43 comprising depolymerizing unfractionated heparin and selecting a preparation comprising heparin chains that are of sufficient length to bridge antithrombin to thrombin but not bridge thrombin to fibrin.